

Public (1895) Department.

ORDINARY MS.

G.O., No. 103

DATED 9th Feb. 1895

[Despatch Abstract.]

VITAL STATISTICS.

Transferring to the Revenue Department papers regarding improvement in the preparation of---

AM

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

[G
11]
3,000-26-2-24.

ORDINARY, MS.

Public DEPARTMENT.
G.O., DATED 9 Feb. 95
No. 103

When given for copying. 9/2

[Despatch Abstract.]

Transferring to the Rev.
Dept papers regarding
improvement in the
preparation of vital
statistics.

READ AGAIN ORDER OF GOVERNMENT, DATED
189 , No. , MISCELLANEOUS.

ENCLOSURES.

CURRENT No.

STATEMENT WITH DITTO.

ORDER OF GOVERNMENT.

A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

PAPEES NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL (not paged).

3/2/22

N.B. -
A - Copy in full.
B - Not to be copied.
P - Copy abstract only.
Q - Copy heading only.

CS.

That draft order regard-
ing the duties of District
Medical Officers that is
at present with the
is intended to lessen their duties in
CS. ~~in connection with the compilation of~~
in connection with the compilation of
vital statis-
tics. The revenue
officials are responsible for their collection.
In the event
of that order being
passed it would be
well for these papers
to be dealt with in
the Revenue dept
in view to a definite
scheme being sub-
mitted to India.

May these papers
lie over until that
g.p. issues?

35B.

8/1/95.

Yes. 8/1/95.

GOVERNMENT OF MADRAS.

PUBLIC DEPARTMENT.

READ—the following paper:—

From Surgeon-Major-General C. SIBTHORPE, F.R.C.P.I., Surgeon-General with the Government of Madras, to the Chief Secretary to Government, dated Madras, 13th September 1894, No. 508.

With reference to G.O., No. 477, dated 3rd July 1894, on the Resolution of the Government of India regarding vital statistics, No. 2-Sanitary—106-117, dated 18th June 1894, I submit the following remarks.

2. I note in the Sanitary Commissioner's report of 1873, page 86, that Dr. Cornish proposed that the registration should be made generally compulsory and pointed out that not much more than one-half the births and two-thirds of the deaths were then registered. The births were then 17·7 per mille and the deaths 16·9. In 1892 the general birth-rate registered has risen to 27·4 per mille generally, or 29·9 per mille in municipalities; the general death-rate was 22·3 per mille and 29·4 in municipalities. This shows a considerable improvement, but is still far behind the figures quoted in paragraph 9 of the Resolution under reference, viz., average birth-rate for all India 48 per mille and death-rate about 41 per mille.

3. As these vital statistics appear to be so much more accurately recorded in the North-West Provinces and Oudh, it would appear desirable to ascertain what the system is that works so well there; some of it may be due to the fact that there are more Deputy Sanitary Commissioners in those Provinces, who doubtless during their inspection tours give close attention to these important records.

4. I have consulted the marginally-noted medical officers who have had considerable personal experience in the working of the system now existing in Madras, and they are unanimously of opinion that little or no importance is attached to this registration even in municipalities; that in villages the work is altogether in the

Surgeon-Lieut.-Col. A. H. Leapingwell.

Surgeon-Major W. O'Hara.

" G. L. Walker, M.D.

" W. B. Browning.

hands of the karnams, who are unpaid, made to do this duty in addition to the hereditary duties of such appointments and who are scarcely supervised at all in this duty. They receive this information from the lowest castes and classes of village servants; that they are often Brahmins, who care little for the work and do not care much to communicate with the lower classes; that they are often not natives of the villages and know little about what is going on in them. Surgeon-Major Walker deals very fully with this subject in his report published at page 19 of G.O., dated 3rd October 1892, No. 2274 L., and shows how unreliable the statistics of the karnams are.

In the municipalities the registrars are, as a rule, too few and not calculated in proportion to the population or the area to be dealt with.

Both classes of registers are supposed to be inspected by a good many officials from the Tahsildar to the Collector, from the Deputy Inspector of Vaccination to the Sanitary Commissioner, and also by the District Medical and Sanitary Officers. Such inspections, if properly carried out, would take a good deal of time and trouble and there are no rules laid down to guide the majority of these inspecting officers as to what they should examine or the points they should investigate, and that it is not generally the custom to sign the books examined or to make any reports on inaccuracies found or to deal with the registrars for neglect of duty.

Surgeon-Lieutenant-Colonel Leapingwell points out that there are great difficulties in dealing with this question in the zemindari tracts in Vizagapatam district.

5. I note that this subject was dealt with in G.O., dated 14th June 1883, No. 1166. At page 1 of the Proceedings of the Board of Revenue, No. 2914, dated 27th September 1883, in which it is alluded to, it was reported that the following rule had been circulated departmentally:—

“3. One of the most important duties of the District Medical and Sanitary Officers will be the supervision and tabulation of the vital statistics of the district. These returns coming promptly to the notice will form the keystone of their knowledge of the healthy condition of their districts, and will point out them the localities in which special efforts are needed to combat the progress of epidemic or endemic disease. It will not suffice that the District Medical and Sanitary Officer should content himself with the perusal of such returns as tabulated in cutcherry establishments. It is necessary that he should himself direct and supervise the tabulation, calling for information on all doubtful points and especially watching the progress of epidemic diseases. The exact method of dealing with these returns will be settled after consultation with the Board of Revenue.”

It having been decided that the District Medical and Sanitary Officer was not to supervise this tabulation, I understand that the system now working is that one report goes monthly direct to the Collector and another to the Sanitary Commissioner through the District Medical and Sanitary Officer and that no one takes the trouble to see that they are correct. In paragraph 9 of Home Department, India, No. 8-285—296, of 10th August 1882, in the Government Order under consideration it is pointed out that throughout Upper India all vital statistics go to and are reviewed by the Civil Surgeon, who corresponds with our District Medical and Sanitary Officer. In paragraph 7 of the same proceedings it is suggested that the officer who draws deductions from these returns should certainly have at his command all the necessary information as to village population, and the returns should go to him in sufficient detail to enable him to localize results in a useful way.

6. The following suggestions have been made by the medical officers alluded to in paragraph 4, which I consider worth the consideration of Government:—

(a) That the headman of villages should be made the primary registrar, and that he should report to the karnam.

(b) That the karnam should be paid a small sum for this special duty—say, one or two rupees a month.

(c) That the number of union and municipal registrars should be calculated in proportion to the size of the population and the area to be dealt with.

(d) That all registrars should be supplied with printed forms in books in which the entries should be made.

(e) That inspecting officers should report the results of their inspections and that steps should be taken to punish negligence.

(f) That all officials concerned, and particularly the registrars, should be impressed with the importance of the duty.

(g) That the medical subordinates in outlying towns and villages should also be made inspecting officers of the registrars within five miles of their head-quarters.

(h) That after a fixed date all candidates for public service and all school-boys should be required to produce attested extracts from the birth registers.

(i) That no corpse should be buried or burned until the death had been registered and certificates or permits issued by the registrar from a counterfoil book.

(j) Special inducements might be given to all municipal servants for bringing to light cases of non-registered births or deaths.

(k) That the duties of the District Medical and Sanitary Officers as regards these statistics should be more clearly defined.

7. It would, in my opinion, be very desirable that the Sanitary Commissioner should draw up a form, noting the important points to be dealt with, in which the result of inspections of all these registrars' work should be reported upon for the information of the Collector or other official to whom the subordinate is responsible.

From Surgeon-Lieut.-Colonel W. G. KING, M.B., C.M.D.P.H., Acting Sanitary Commissioner, Madras, to the Chief Secretary to Government, dated Fort St. George, 5th September 1894, No. 1669-S.

With reference to G.O., dated 3rd July 1894, No. 477, I have the honour to submit herewith a memorandum containing the remarks therein called for.

ENCLOSURE.

MEMORANDUM on Government of India Resolution No. 2-Sanitary—106-117, communicated with Madras G.O., No. 477, dated 3rd July 1894.

I. The use of the “rate of increase” in calculating ratios of Vital Statistics.— Should the “estimated population” be utilized in calculating ratios of vital statistics in the case of this Presidency? I would unhesitatingly answer this query in the affirmative. In paragraph 8 of the resolution under reference, it is noted that the Secretary of State for India and the Government of India consider that yet another census should be taken before the introduction of this method. If upon the figures representing the “estimated population” there be not placed a fictitious value, I cannot see the object of thus deferring the very obvious advantages to be secured by their use. It is believed that the census of 1881 was conducted with accuracy in this Presidency. There can be no doubt also that the census for 1891 was undertaken with very great care as to details as a result of experience gained in the preceding census. But in the decade 1871-1881 there had been the severe famine of 1876-77, and it is believed that the incidence of mortality was then such as to ensure in the decade 1881-1891 an abnormal proportion of adults at the child-bearing age. The rate of increase between the two decades was therefore presumably greater than in periods unaffected by such incidents. But against this is to be balanced the facts that no great famine or epidemic occurred between 1881 and 1891, and, as previously stated, that the census operation on both occasions were conducted carefully. To procrastinate till another census be taken would imply that the two census operations were conducted inefficiently, or that the disturbing factor as to the child-bearing population was so great as to render the results valueless, and that by waiting for another decade it would be possible to avoid both the disturbing factors of famine and epidemics. In reference to the last point, I may remind Government that already in the present decade a disturbing element has forced itself upon notice; following a period of food scarcity not amounting to famine, there occurred between 1891 and 1893, in accordance with the temporary decline of prosperity of the ryot and the poorer classes, a decrease of marriages and a consequent decrease of births in the Presidency; similarly, in certain of the more severely affected districts, the death rate of the very young and the old showed an increase, presumably due not to actual lack of food, but to the stinting of luxuries that often approach the character of necessities where the young and feeble are concerned. In short, I would suggest that there can be no object in deferring the use of the results showing the rate of increase between the last two decades, it being impossible to foresee the passing of any ten years in this country without very great chance of disturbance of conditions affecting the birth and death rate. To take, therefore, the results of a fairly normal decade and to apply them with the knowledge gained from other sources which appeals to the exercise of discretion, therefore, seems to me the correct method to follow. But in doing this, I would caution those who use statistics so calculated that by reason of emigration and immigration and conditions affecting the prosperity of the people, the utmost that can be said in their favour is that they are *estimates*, and, whilst they undoubtedly give a more accurate idea of the truth than if the basis of calculation was the population ascertained at the last census, the possibility of their being erroneous within a certain limit must be admitted. But to enable the reader to gauge the possibilities himself, I would take two precautions: firstly, side by side with the calculation of ratios upon the estimated population, I would place ratios calculated upon the last census population; and where small areas, as contrasted with huge districts, are concerned—that is to say, in dealing with individual villages or towns—I would take the second precaution of stating, whether or not abnormal conditions were in operation at the time of the

census, by the use of an appropriate foot-note. This method has now been employed since August 1893 by me in submitting to Government monthly vital statistics of this Presidency; also throughout my annual report on the sanitation of the Madras Presidency for 1893, these combined methods have been employed.

2. Passing to the question of actual utility, I think there is no room for difference of opinion on the subject. Whilst the reader of vital statistics that have been corrected with the above precaution is aware that at least he is obtaining an approach to the truth, when simply the census population is dealt with he must perceive that they are misleading, and this too with the knowledge that as years advance the grade of inaccuracy must become wider; whilst on the opposite, he must be aware that for at least the first three years or so the figures based on the "estimated population" must approach very closely to accuracy. The latter fact points to the necessity for Government not to be satisfied with a census every ten years. Whilst there can be no necessity for a complete census, taking into account the social condition of the population, very little expense and time would be necessary to make a simple enumeration in the whole Presidency, or, at least, of selected districts every third or fifth year. In urging the question of utility, I made the following remarks in my letter embodied in G.O., No. 349 L., dated 19th February 1894, in which I sought the permission of Government to adopt this method:—

"I show below the effects of calculating upon the recorded population of 1881 up to February 1891, and then exhibit the results of the correction possible during that period by the use of the estimated population. In the third column I show the actual figures as revealed by the census of 1891:—

Towns.	Actual deaths recorded in the twelve months ending with 29th February 1891.	Population according to the census of 1881.	Estimated population calculated on the rate of increase between the census of 1871 and 1881.	Population according to the census of 1891.	Death rate per mille reckoned on the population of 1881.	Death rate per mille reckoned on the estimated population.	Death rate per mille reckoned on the census population of 1891.
Mannargudi	549	19,409	21,279	20,395	28.3	25.8	26.9
Ongole	208	9,200	11,450	10,860	22.6	18.2	19.2
Cochin	502	15,698	17,805	17,601	32.0	28.2	28.5
Calicut	3,056	57,085	67,943	66,078	53.5	45.0	46.2
Berhampur	406	23,599	25,700	25,653	17.2	15.8	15.8
Trichinopoly	2,629	84,449	93,187	90,609	31.1	28.2	29.0
Madras	17,204	405,848	431,268	452,518	42.4	39.9	38.0

The examples given above at once afford instances of the utility of the method and of the extent to which it can be misleading; but I think no one can help feeling that to be told that, according to the estimated population, 1 in 22.2 died annually in Calicut and 1 in 25.1 annually in Madras, respectively, is much nearer the actual truth, as revealed by the census of 1891, than when, on using the census population of 1881, the rate of death is said to be 1 in 18.7 and 1 in 23.6 respectively."

3. Nor does the utility of employing the "estimated population" cease with an attempt at securing a valuable approach to accuracy of vital statistics. If, at the opening of each official year, it were announced to local bodies that it is *estimated* that such and such an amount of vaccination ought to be secured, much better results might be forthcoming and certainly a more accurate mode of gauging the progress of *infantile* vaccination would be obtained than by using the present absolutely futile mode of reckoning upon the *total* census population. As an example of this sphere of utility, I would quote the following letter in which I dealt with the subject of outturn possible by a municipality:—

"Taking into consideration the population of your town (Coimbatore) as shown by the last census and the rate of increase then ascertained, there should survive to pass through the vaccinators' hands at end of two periods of six months 2,099 infants before the end of the year 1894, of whom, allowing for "leaving the town" and similar causes of disappearance, at least 94 per cent. should be returned as actually vaccinated. Again, it would not be unreasonable, taking into consideration the state of vaccination up to date in your town, to suppose that at least 30

per cent. of children between 1 and 5 years of age still require vaccination, giving a total of 3,698 *primary* vaccination cases. Further, if re-vaccination be effected on the very moderate scale of 3 per cent. of persons living between 10 and 15 (4,959) and 2 per cent. of persons between 20 and 25 (4,433), this class of operations should amount to the modest total of 238. In all, there should therefore be performed at least 3,936 operations this year, or about 328 cases per month, against 120 performed by you."

4. II. Suggestions for improvement of methods of Registration of Births and Deaths.

—In regard to improving the existing admittedly poor methods of collecting statistics, the matter is almost strictly financial. The population of this Presidency is so well educated, that it would not be difficult to flood the country with B.As. fully qualified as registrars; the only difficulty would be to find pay for them. As suggested in paragraph 11 of the resolution under discussion, any improvement must take the form of reorganizing existing elements. In paragraph 3 of my report on the re-organization of the Vaccination Department, embodied in G.O., No. 1066 L., dated 9th May 1892, I pointed out that a well-arranged system of registration must form the foundation for any effort towards fully vaccinating the population of this Presidency. I came to the conclusion that karnams of villages who at present conduct the duty of registrars must be retained; as to supplant them by a completely new staff was financially out of the question, and even to offer them the inducement of an increase of pay could not be advised, as the annual cost would be very heavy. Under these circumstances, I proposed that (1) rewards to the total amount of Rs. 5,000 should be distributed annually to karnams, who for three years have proved the accuracy of their registers to the satisfaction of an inspecting officer. This could always be arranged at jamabandi; (2) that medical subordinates in charge of out-patient dispensaries in villages in the employ of local bodies, who are now stationed in 352 villages, should be ordered to revise karnams' statement of births and deaths so as to secure the use of the correct nomenclature of diseases—a matter of very great importance when attempting to gauge the sanitary state of the people, and which is at present out of the power of the Sanitary Department. I pointed out this would necessitate the use of two forms of village registers—one set applicable to villages where no medical subordinate is stationed, and another where this is the case; (3) that Government should notify that, after the lapse of a certain number of years from date of notification, "horoscopes" would not be accepted in courts of law as sufficient evidence of a person's age, the object being to encourage registration and the securing of an officially certified copy of the date of births as well as of deaths. For this purpose I suggested that (a) a small fee might be exacted for a copy of a birth registration entry signed by a karnam; (b) a slightly large sum for a copy by the Registration of Documents Department; (c) and a still larger fee for a copy countersigned by the Collector of the district. This would (a) bring home to all the value of registration—as in litigation of which natives are prodigiously fond—and would (b) start a system which would in time become lucrative to Government, especially if (c) the registration of marriages also were provided for.

5. None of the above measures can, however, be regarded as more than affording aid to an end; the radical improvement required is the complete re-organization of the Vaccination Department to an extent to secure the services of a well-educated, trustworthy, and contented class of subordinates, and it is in the entertainment of such a scheme it seems to me lies the cheapest solution of the difficulty. Registration and vaccination must go hand in hand; given a class of subordinates entitled to respect from the karnams instead of the indifferently educated and poorly paid class at present entertained, arm such men with a certain amount of authority over village heads and support that authority well at the outset, when if the staff be calculated so as to be able to dealing correctly with the areas under their charge, both birth and death registration could be reduced to a state of fair exactitude; but, to get full results for expenditure from this staff, it is essential that both vaccination and registration should be rendered compulsory in rural tracts. Government proposes to make vaccination compulsory in all major unions, and there seems to me no substantial reason why this intention should not be extended throughout the Presidency except in the hill tracts. If side by side, with compulsory vaccination, compulsory registration were worked the existing difficulties would disappear. As to enforcing

these measures, the extra work thrown upon the magistracy would certainly not be great, as it cannot be pleaded by any one that the reporting of a birth or death to the authority appointed for the purpose can be styled a hardship. Stationary Magistrates are now freely scattered throughout the Presidency, and if the work of these officials in connection with compulsory vaccination and registration were aided by Honorary Magistrates, the system ought to work correctly. District Sanitary officers might also usefully be invested with magisterial powers for this purpose. It seems to me incompatible with the existence of a civilized Code of Criminal Law enforced by an expensive magistracy and police that there should exist any hesitation in Government availing itself of compulsory registration of births and deaths—one of the most useful methods of checking crime.

6. Both vaccination and registration being compulsory in municipalities, it but requires firm pressure from Government to secure better results, and I think the direction of this pressure should be in insisting that Bench Magistrates should inflict more deterrent punishments than at present. Still better results, I think, would be secured by not considering the registration of births and deaths a matter for municipal administration; it should be regarded as part of the duty of the department which I shall describe in the last paragraph of this memorandum.

7. Whilst as regards villages of a small size, the karnam can, under pressure from the Revenue officer or under promise of reward, effect correct registration; in those having a population of over 5,000 persons, it is beyond the power of this functionary. There must in this case be appointed a special staff. The cost of this staff should be a charge upon local funds, which might be aided by Government to whom the proceeds of certificates for registration would form a small contribution. This staff, I think, should take the form of sanitary inspectors charged also with registration duties and subject to the orders in this respect to the department described in the last paragraph.

8. If these various proposals be woven together, it is not difficult to see the type of staff that is required, especially if we look to aid also from another existing class of officers, namely, District Medical and Sanitary officers. I have twice pressed upon Government the desirability of forming District Sanitary Boards to work in communication with the Sanitary Board of the Presidency. This idea has, however, been negatived. But I also proposed as an alternative the following measure—*vide* paragraph 4 of Proceedings of the Sanitary Board embodied in G.O., No. 231 L., dated 31st January 1891, Local and Municipal:—

* * * * *

"It is also thought that, to render the position of District Sanitary officers fully effective, they should be *ex-officio* Vice-Presidents of District Boards for medical, sanitary and vaccination services, there being a second Vice-President for finance and engineering. All sums allotted for sanitary purposes should be spent with the concurrence or supervision of District Sanitary officers in their function of Vice-President, subject to the usual discretion exercised by Presidents. As District Sanitary officers would thus be in a position to advise as to sanitary outlay more fully than at present, and in consideration of the fact that they are in frequent communication with the office of the Sanitary Commissioner, there would result by a natural evolution a Sanitary Department, having for its head the Sanitary Commissioner, that should prove of utility not only in connexion with the suppression of cholera, but in dealing with all sanitary questions affecting populations."

* * * * *

Mr. Mullaly, Collector, of Kurnool, arguing from the view of the District officer, has made identically the same proposal to Government, but has, with advantage, carried the prime idea (which I need not add he had excogitated for himself without a knowledge of my previous writing on the subject) by suggesting that District Sanitary officers should possess certain powers of control over village heads in respect to sanitation and registration (*vide* G.O., dated 25th April 1894, Mis. No. 753 L.).

9. Having enlisted the aid of officers who would thus have admirable facilities of control, I would suggest welding the remodelled Vaccination and Registration Department into a homogeneous whole so as to form a Public Health Department.

To understand how I would propose the necessary changes, it must be remembered that I have endeavoured throughout to utilize existing not to create new staff and that the various steps suggested have been as follows.

10. In *rural tracts* (villages below 5,000 inhabitants each), karnams or headmen of villages to be used as at present for registration purposes, subject to supervision by the Public Health Department.

11. For *villages of over 5,000 inhabitants*, the entertainment of a new class of men—rural sanitary inspectors—who besides their public health functions should collect vital statistics and effect vaccination under a compulsory Act in an area embracing as far as feasible not less than three such villages, the karnams being, for the latter purposes, their assistants: where medical subordinates are stationed special forms to be employed; the salaries of these rural sanitary inspectors to be paid by a special rate upon houses in all places not classed as unions; where unions exist the ratio to be enhanced sufficiently to pay these men.

12. All *municipalities* to be directed to cease making use of sanitary inspectors as bill collectors, and the services of these men to be exclusively devoted to sanitary work; a sufficient number of registrars to be appointed and their work to be supervised by urban sanitary inspectors who should also fulfil the functions of public vaccinator in the town to which they are attached.

13. The work of the Public Health Department, whose duties would thus include the supervision of sanitation, vaccination and registration, would be supervised by Superintendents of Vaccination (scheme No. 1 detailed in my report embodied in G.O., No. 1066 L., dated 9th May 1892) or by Deputy Sanitary Commissioners as originally proposed by Surgeon-General Cornish (G.O., No. 1537, dated 21st October 1879, Public), by District Sanitary officers (*ex-officio* Vice-Presidents of District Boards) and by the Sanitary Commissioner.

14. Of course, this is a very rough statement of requirements; no calculation of expenditure accompanies it and it may be shown to be financially impossible. Taking these facts into calculation however and granting that modifications be necessary, I believe the direction to which I point is correct, and that in the complete re-organization of the present poor Vaccination Department and allying it with public health and registration duties lies the *cheapest solution of the question*. In paragraph 1 of my report just quoted, I have given reasons for exactly the opposite mode of thinking, that is, I have advocated the desirability of separating entirely the Sanitary and Vaccination Departments; but when it is obvious that funds cannot be forthcoming for complete and separate staffs for each department as there advocated, the only course open is to suggest the compromise I have made.

(Signed) W. G. KING, Surgn.-Lt.-Col.,
Ag. Sanitary Commissioner, Madras.

No. 861.

Transferred to the Public Department.

FORT ST. GEORGE,
22nd September 1894.

(Signed) W. FRANCIS,
Ag. Assistant Secretary.

To the Public Department.

Public dept

Currents 2627, 2718 & 3718

This is clearly a matter to be
dealt with in the R.D. - But
why send it down at all? Have
Ind enough to do without taking
what may be called interlocking
work of this kind?

MS
7/2/95

Para: 6 of S.O. of 24. Jan'y. 95,
No. 57.

Order of 9 Feb. 95, No. 103

As the duty of
collecting vital statistics
rests with the Revenue
authorities and as the
Government has been
impressed upon them
the necessity for relieving
Medical Officers as
much as possible of
duties connected with
the ^{scrutiny} ~~formal preparation~~ of such
statistics the papers
read at the head
of this order will
be forwarded - together
with a copy of G.O.
of 3d. July 1894,
No. 477, - to the
Revenue Department
in view to a definite
scheme being formulated
and reported to the G.O.

To

The Revenue Dept

With the currents
in orig. & proof.

RECEIVED
13 FEB 95

4/2/95

MS 5/2

Vital Statistics

Memorandum on Government of India Resolution No 2, Sanitary, 106-117, communicated with Madras Government Order No. 47, dated 3rd July 1891.

I.—THE USE OF THE 'RATE OF INCREASE' IN CALCULATING RATIOS OF VITAL STATISTICS.

Should the 'estimated population' be utilized in calculating ratios of vital statistics in the case of this Presidency? I would unhesitatingly answer this query in the affirmative. In paragraph 8 of the Resolution under reference, it is noted that the Secretary of State for India and the Government of India consider that yet another census should be taken before the introduction of this method. If, upon the figure representing the 'estimated population,' there be not placed a fictitious value, I cannot see the object of thus deferring the very obvious advantages to be secured by their use. It is believed that the census of 1881 was conducted with accuracy in this Presidency. There can be no doubt also that the census for 1891 was undertaken with very great care as to details, as a result of experience gained in the preceding census. But, in the decade—1871-1881—there had been the severe famine of 1876-77, and it is believed that the incidence of mortality was then such as to ensure in the decade 1881-1891 an abnormal proportion of adults at the child-bearing age. The rate of increase between the two decades was, therefore, presumably greater than in periods unaffected by such incidents. But against this are to be balanced the facts that a great famine or epidemic occurred between 1881 and 1891, and, as previously stated, that the census operations on both occasions were conducted carefully. To procrastinate till another census be taken, would imply that the two census operations were conducted inefficiently, that the disturbing factor as to the child-bearing population was so great as to render the results valueless, and that by waiting for another decade it would be possible to avoid the disturbing factors of famine and epidemics. In reference to the latter point, I remind Government that already in the present decade a disturbing element has forced itself upon notice; following a period of food scarcity not amounting to famine there occurred between 1891 and 1893, in accordance with the temporary decline of prosperity of the ryot and the poorer classes, a decrease of marriages and a consequent decrease of births in the Presidency; similarly, in certain of the more severely-affected districts, the death-rate of the young and the old showed an increase—presumably due not to actual lack of food but to stinting of luxuries that often approach the character of necessities where the young and feeble are concerned. In short, I would suggest that there can be no object in deferring the use of the results showing the rate of increase between the last two decades—it being impossible to foresee the passing of any ten years in this country, without very great chance of disturbance of conditions affecting the birth and death rate. To take, therefore, the results of a very normal decade, and to apply them with the knowledge gained from other sources which leads to the exercise of discretion, therefore, seems to me the correct method to follow. But, doing this, I would caution those who use statistics so calculated that by reason of emigration and immigration and conditions affecting the prosperity of the people, the utmost that can be said in their favour is that they are estimates, and, whilst they undoubtedly give more accurate idea of the truth than if the basis of calculation was the population ascertained at the last census, the possibility of their being erroneous within a certain limit must be admitted. But, to enable the reader to gauge the possibilities himself, I would take two precautions: firstly, side by side with the calculation of ratios upon the estimated population, I would place ratios calculated upon the last census population; and, where small areas, contrasted with huge districts are concerned, that is to say, in dealing with individual villages or towns, I would take the second precaution of stating whether or not abnormal conditions were in operation at the time of the census, by the use of an appropriate foot-note. This method has now been employed since August 1893 by me in submitting to Government monthly vital statistics of this Presidency: also throughout my Annual Report on the Sanitation of the Madras Presidency for 1893, these combined methods have been employed.

2. Passing to the question of actual utility, there is no room for difference of opinion on the subject. Whilst the reader of vital statistics that have been corrected with the above precaution is aware that at least he is obtaining an approach to the truth, where simply the census population is dealt with he must perceive that they are misleading, and this too with the knowledge that as years advance the gross inaccuracy must become wider; whilst on the opposite, he must be aware that for at the first three years or so, the figures based on the 'estimated population' must approach closely to accuracy. The latter fact points to the necessity for Government not to be satisfied with a census every ten years. Whilst there can be no necessity for a complete census being taken into account the social condition of the

After Mr. B. S. S. S.

M. S. S. S.

Secretary to Govt. Rev. Dept.
for favour of counter initials

population, very little expense and time would be necessary to make a simple enumeration in the whole Presidency, or at least of selected districts every third or fifth year. In urging the question of utility, I made the following remarks in my letter embodied in G.O., No. 349 L., dated 19th February 1894, in which I sought the permission of Government to adopt this method:—

.... In the decade—1881–1891—there was no famine except in Ganjam; consequently the rate of increase during the period ought to be fairly accurate. During 1871–1881, however, there occurred the severe disturbing factor of the famine of 176–78, and hence the calculations based on the census of 1881 are not likely to be so trustworthy as in the latter decade. I show below the effects of calculating upon the recorded population of 1881 up to February 1891, and then exhibit the results of the correction possible during that period by use of the estimated population. In a third column I show the actual figures as revealed by the census of 1891:—

Towns.	Actual deaths recorded in the 12 months ending with 29th February 1891.	Population according to the census of 1881.	Estimated population calculated on the rate of increase between the census of 1871 and 1881.	Population according to the census of 1891.	Death-rate per mille reckoned on the population of 1881.	Death-rate per mille reckoned on the estimated population.	Death-rate per mille reckoned on the census population of 1891.
Mannargudi ...	549	19,40	21,279	20,305	28.3	25.8	26.9
Ongole ...	208	9,20	11,450	10,860	22.6	18.2	19.2
Ochil ...	502	15,60	17,805	17,001	32.0	28.2	28.5
Calicut ...	3,056	57,00	67,943	66,078	53.5	45.0	46.2
Berhampur ...	406	23,54	25,700	25,653	17.2	15.8	15.8
Trichinopoly ...	2,629	81,44	93,187	90,609	31.1	28.2	29.0
Madras ...	17,204	403,84	431,268	452,518	42.4	39.9	38.0

The examples given above at once afford instances of the utility of the method and of the extent to which it can be misleading; but I think one can help feeling that to be told that, according to the estimated population, 1 in 22.2 died annually in Calicut and 1 in 25.1 annually in Madras, respectively, is much nearer the actual truth revealed by the census of 1891, than when, on using the census population of 1881, the rate of death is said to be 1 in 18.7 and 1 in 23.6, respectively.

3. Nor does the utility of employing the 'estimated population' cease, with an attempt at securing a valuable approach to accuracy of vital statistics. If, at the opening of each official year, it were announced to local bodies that it is *estimated* that such and such an amount of vaccination ought to be secured, much better results might be forthcoming and certainly a more accurate mode of gauging the progress of *infantile* vaccination would be obtained than by using the present absolutely futile mode of reckoning upon the *total* census population. As an example of this sphere of utility I would quote the following letter in which I dealt with the subject of outturn possible by municipalities:—

Taking into consideration the population of your town, as shown by the last census, and the rate of increase then ascertained, there should pass through the vaccinators' hands at the end of two periods of six months 2,099 infants before the end of the year 1894; of whom, allowing for leaving the town and similar causes of disappearance, at least per cent. should be returned as actually vaccinated. Again, it would not be unreasonable, taking into consideration the state of vaccination up to date in your town to suppose that at least per cent. of children between one and five years of age still required vaccination—giving a total of 8 primary vaccination cases. Further, if re-vaccination be effected on the very moderate scale of 3 per cent. of persons living between 10 and 15 (4,959) and 2 per cent. of persons between 20 and 25 (3) this class of operation should amount to the modest total of 238. In all there should, therefore, be performed at least 3,936 operations this year, or about 328 cases per month against 120 performed now.

II.—SUGGESTION FOR IMPROVEMENT OF METHODS OF REGISTRATION OF BIRTHS AND DEATHS.

4. In regard to improving the existing admittedly poor methods of collecting statistics, the matter is almost strictly financial. The population of this Presidency is so well educated, that it would not be difficult to flood the country with B.As. fully qualified as registrars: the only difficulty would be to find pay for it. As suggested in paragraph 11 of the Resolution under discussion, any improvement must be in the form of re-organizing existing elements. In paragraph 3 of my report on the re-organization of the Vaccination Department embodied in G.O., No. 1066 L., dated 9th May 1892, I pointed out that a well-arranged system of registration must form the foundation for any efforts towards fully vaccinating the population of this Presidency. I came to the conclusion that kams of villages, who at present conduct the duty of registrars, must be retained; as to supplementing by a completely new staff was financially out of the question, and even to offer them the increase of pay could not be advised, as the annual cost would be very heavy. Under these circumstances, I proposed that (1) rewards to the total amount of Rs. 5,000 should be distributed annually to kurnams, who for three years have proved the accuracy of their returns to the satisfaction of an inspecting officer—

this could always be arranged at jumabundi; (2) that Medical subordinates in charge of out-patient dispensaries in villages, in the employ of local bodies (who are now stationed in 352 villages) should be ordered to revise the kurnam's statement of births and deaths, so as to secure the use of the correct nomenclature of diseases—a matter of very great importance when attempting to gauge the sanitary state of the people, and which is at present out of the power of the Sanitary Department. I pointed out this would necessitate the use of two forms of village registers—one set applicable to villages where no Medical subordinate is stationed, and another where this is the case; (3) that Government should notify that, after the lapse of a certain number of years from date of notification, 'horoscopes' would not be accepted in Courts of Law as sufficient evidence of a person's age, the object being to encourage registration, and the securing of an officially-certified copy of the date of births as well as of deaths. For this purpose, I suggested that (a) a small fee might be exacted for a copy of a birth registration entry signed by a kurnam; (b) a slightly larger sum for a copy by the Registration of Documents Department; (c) and a still larger fee for a copy countersigned by the Collector of the district. This would (a) bring home to all the value of registration—as in litigation of which natives are prodigiously fond—and would (b) start a system which would in time become lucrative to Government, especially if (c) the registration of marriages also were provided for.

5. None of the above measures can, however, be regarded as more than affording aid to an end; the radical improvement required is the complete re-organization of the Vaccination Department to an extent to secure the services of a well-educated, trustworthy and contented class of subordinates, and it is in the attainment of such a scheme, it seems to me, lies the cheapest solution of the difficulty. *Registration and vaccination must go hand in hand.* Given a class of subordinates entitled to respect from the kurnams instead of the indifferently-educated and poorly-paid class at present entertained, arm such men with a certain amount of authority over village heads, and supply that authority well at the outset, when, if the staff be calculated so as to be able to deal directly with the areas under their charge, both birth and death registration could be reduced to a state of fair exactitude; but, to get full results for expenditure from this staff, it is essential that both vaccination and registration should be rendered compulsory in rural tracts. Government proposes to make vaccination compulsory in all major unions, and there seems to me no substantial reason why this intention should not be extended throughout the Presidency, except in the Hill tracts. If side by side, with compulsory vaccination, compulsory registration were worked, the existing difficulties would disappear. As to enforcing the measures, the extra work thrown upon the Magistracy would certainly not be great, it cannot be pleaded by any one that the reporting of a birth or death to the authority appointed for the purpose can be styled a hardship. Stationary Magistrates are now freely scattered throughout the Presidency, and if the work of these officials in connection with compulsory vaccination and registration were aided by Honorary Magistrates, the system ought to work correctly. District Sanitary officers might also usefully be invested with Magisterial powers for this purpose. It seems to me incompatible with the existence of a civilized Code of Criminal Law enforced by an expensive Magistracy and Police, that there should exist any hesitation in Government availing itself of compulsory registration of births and deaths—one of the most useful methods of checking crime.

6. Both vaccination and registration being compulsory in Municipalities, it but requires firm pressure from Government to secure better results, and I think the direction of this pressure should be in insisting that Bench Magistrates should inflict more deterrent punishments than at present. Still better results, I think, would be secured by not considering the registration of births and deaths a matter for municipal administration; it should be regarded as part of the duty of the department which I shall describe in the last paragraph of this memorandum.

7. Whilst as regards villages of a small size the kurnam can, under pressure from the Revenue officer or under promise of reward, get correct registration; in those having a population of over 5,000 persons, it is beyond the power of this functionary. There must in this case be appointed a special staff. The cost of this staff should be a charge upon Local funds, which might be aided by Government, to whom the proceeds of certificates for registration would form a small contribution. This, I think, should take the form of Sanitary Inspectors, charged also with registration duties and subject to the orders in this respect to the department described in the last paragraph.

8. If these various proposals be woven together, it is not difficult to see the type of staff that is required—especially if we look to aid also in another existing class of officers, namely, District Medical and Sanitary officers. I have pressed upon Government the desirability of forming District Sanitary Boards to work in communication with the Sanitary Board of the Presidency. This idea has however been negatived. But, I also proposed, as an alternative, the following measure (paragraph 4 of Proceedings of Sanitary Board, embodied in G.O., No. 231, dated 31st January 1891):—

It is also thought that, to render the position of District Sanitary officers fully effective, they should be ex-officio Vice-Presidents of District Boards Medical, Sanitary and Vaccination services—there being a second Vice-President for finance and engineering. All sums allotted for sanitary purposes should be spent with the concurrence and supervision of District Sanitary officers in their

function of Vice-Presidents—subject to the usual discretion exercised by Presidents. As District Sanitary officers would thus be in a position to advise as to sanitary outlay more fully than at present, and in consideration of the fact that they are in frequent communication with the office of the Sanitary Commissioner, there would result by a natural evolution a Sanitary department, having for its head the Sanitary Commissioner, that would prove of utility not only in connection with the suppression of cholera, but in dealing with all sanitary questions affecting populations.

Mr. Mullaly, Collector of Kurnool, arguing from the view of the District officer, has made identically the same proposal to Government, but has, with advantage, carried the prime idea (which I need not add he had excogitated for himself without a knowledge of my previous writing on the subject) by suggesting that District Sanitary officers should possess certain powers of control over village heads in respect to sanitation and registration.

9. Having enlisted the aid of officers who would thus have admirable facilities of control, I would suggest welding the remodelled Vaccination and Registration department into a homogeneous whole, so as to form a *Public Health Department*. To understand how I would propose the necessary changes, it must be remembered that I have endeavoured throughout to utilize existing—not to create a new staff, and that the various steps suggested have been as follows.

10. In *rural tracts* (villages below 5,000 inhabitants each) kurnams or headmen of villages to be used as at present for registration purposes, subject to supervision by the Public Health Department.

11. For *villages of over 5,000 inhabitants*, the entertainment of a new class of men—rural Sanitary Inspectors—who, besides their public health functions, should collect vital statistics, and effect vaccination under a compulsory Act in an area embracing, as far as feasible, not less than three such villages—the kurnam being for the latter purpose their assistants: where Medical subordinates are stationed, special forms to be employed; the salaries of these rural Sanitary Inspectors to be paid by a special rate upon houses in all places not classed as unions; where unions exist, the rates to be enhanced sufficiently to pay these men.

12. All *municipalities* to be directed to cease making use of Sanitary Inspectors as bill collectors, and the services of these men to be exclusively devoted to sanitary work; a sufficient number of registrars to be appointed, and their work to be supervised by these urban Sanitary Inspectors, who should also fulfil the functions of public vaccinator in the town to which they are attached.

13. The work of the Public Health Department, whose duties would thus include the supervision of Sanitation, Vaccination and Registration, would be supervised by Superintendents of Vaccination (Scheme No. 1 detailed in a report embodied in G.O., No. 1660 L, dated 9th May 1892) or by Deputy Sanitary Commissioners as originally proposed by Surgeon-General Cornish (G.O., No. 1537, dated 21st October 1879, Public), by District Sanitary officers (*ex-officio* Vice-Presidents of District Boards) and by the Sanitary Commissioner.

14. Of course, this is a very rough sement of requirements; no calculation of expenditure accompanies it, and it may be shown to be financially impossible. Taking these facts into calculation however, and granting that modifications be necessary, I believe the direction to which I point is correct, and that in the complete re-organization of the present poor vaccination department and allying it with Public Health and Registration duties lies the *cheapest solution of the question*. In paragraph 14 of my report just quoted, I have given reasons for exactly the opposite mode of thinking, it is, I have advocated the desirability of separating entirely the Sanitary and Vaccination departments; but when it is obvious that funds cannot be forthcoming for complete and separate staffs for each department as there advocated, the only course open is to suggest the compromise made.

(Signed) W. KING, M.B., C.M., D.P.H., Surgeon-Lieut.-Colonel,
Acting Sanitary Commissioner.

[G.]
40

5,000—20-8-06.

DEPARTMENT.

Paper taken out of the Records from
charge of the Record-keeper.

No. 186 of 1895.

Series.

To whom given.

For Current No. 268 of 1895.

Department.

When given.

Signature of the Record-keeper. Signature of the Clerk taking.

ORDINARY, MS.

Public DEPARTMENT.

G.O., DATED 9-2-95

No. 103.

When given for copying.

[Despatch Abstract.]

Kitab Statistics. — Trans-
ferring to the Revenue
Department papers
regarding improvement
in the preparation of—

origl put up with
Publicus 1255 23
383 of 96

reorganization of
the Sanitary Dept. now in progress

C-9

When given for copying _____
 When copied _____
 When examined _____
 When signed _____

189

READ AGAIN G.O., No.
189

DATE:

CURRENT No.

ENCLOSURES TO C. No.

ORDER OF GOVERNMENT	..	..	..	A	A	A	A	A	A
---------------------	----	----	----	---	---	---	---	---	---

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL.

N.B.—

A = Copy in full.
B = Not to be copied
P = Copy abstract only.
Q = Copy heading only